LITERATURE. No. 38. b.

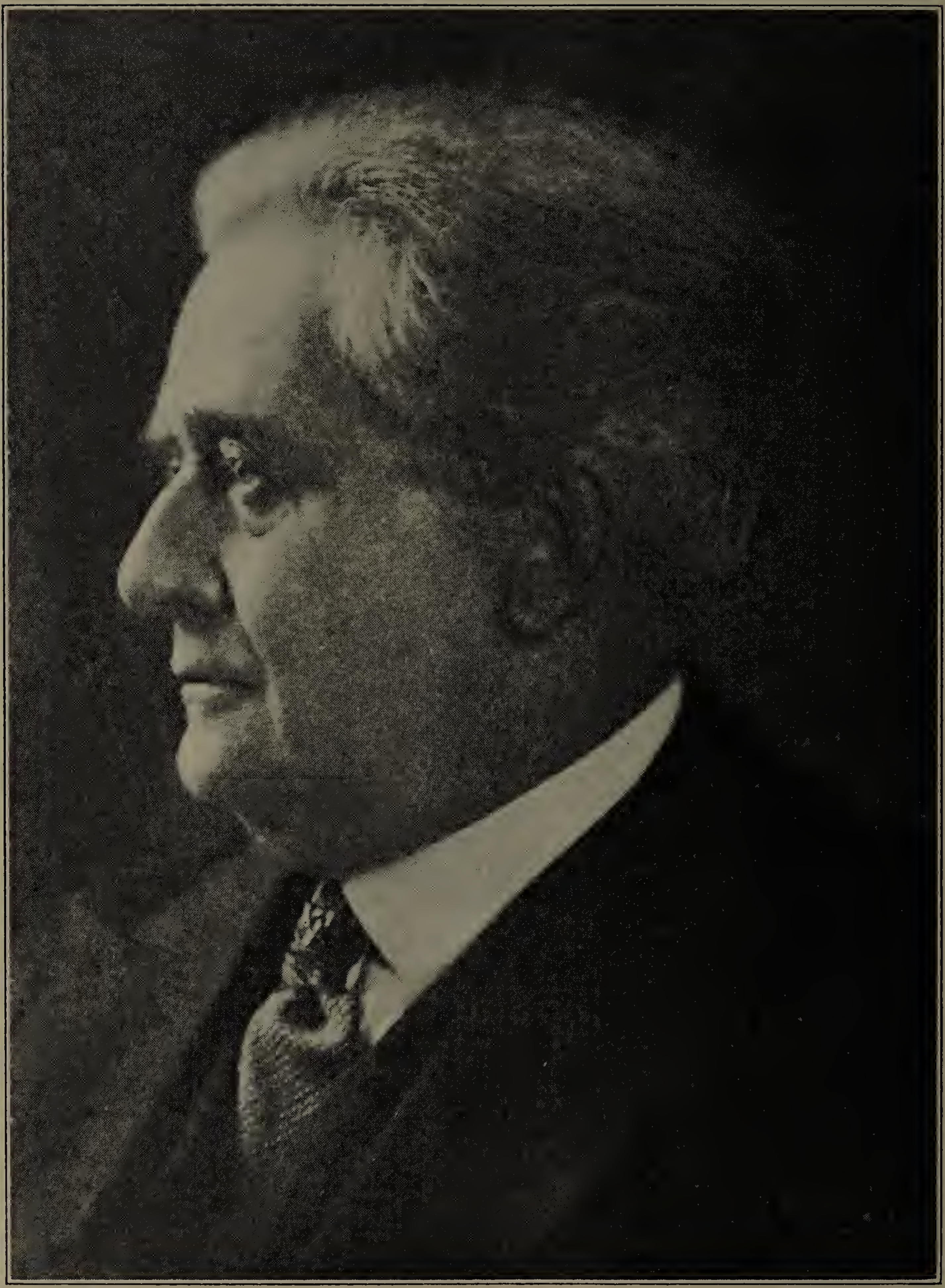
14

FRIEDRICH FÜLLEBORN

H. W. Stunkard

Reprinted from The Journal of Parasitology, June, 1934, Vol. XX, No. 4

93327



Friedrich Fülleborn

Reprinted from The Journal of Parasitology, June, 1934, Vol. XX, No. 4

FRIEDRICH FÜLLEBORN

H. W. Stunkard

The American Society of Parasitologists notes with deep regret the death on the 9th of September, 1933, of Professor Dr. Fülleborn, Director of the Institut für Schiffs- und Tropenkrankheiten in Hamburg. An honorary foreign member of the Society, a world figure in the field of tropical medicine and parasitology; his American colleagues bear tribute to his personal qualities and scientific attainments.

Friedrich Georg Hans Fülleborn was born at Kulm, the 13th of September, 1866. He studied medicine and science at Berlin. From the beginning of his second semester he assisted, first as Famulus and later as Volontärassistent, in the laboratory of Prof. Hans Virchow, an association which led to a close and lasting friendship between him and the son of the illustrious pathologist. After passing the Physicum examination he worked also with Professors Waldeyer and von Luschan, under whose influence he became much interested in anthropology. Before qualifying in the medical Staatsexamen his knowledge of subject-matter and maturity of judgment were so marked that on occasion he was requested to substitute for Prof. Rabl-Rückardt in the histological laboratory.

Even during his student days his interests were always wider and deeper than the limits of the medical curriculum. The causes, significance and relations of biological phenomena held a fascination for him. An independent and inquisitive type of mind and a prodigious capacity for work caused him to begin investigation while his associates were still laboring over their text books. His first researches were done on the development of the allantois in birds.

He was fortunate in beginning his scientific career during the golden age of academic freedom and scientific progress in Germany which attracted students from all parts of the world to the German universities. The studies of Gegenbauer, Fürbringer, Koelliker, Wiedersheim and others had made anatomy broadly comparative, and the successors of Johannes Müller, among whom may be listed Ludwig, Helmholtz, Du Bois-Reymond, Verworn, and Liebig, had made physiology a truly experimental science. The philosophy of the time accepted the dictum that medicine is based on biological phenomena and that it can attain its highest development only by a thorough knowledge and wise application of broad biological principles. The greatest physicians were conducting fundamental researches on the nature of biological processes as they occur in lower organisms. Although his life was devoted to practical aspects of clinical medicine, Fülleborn always cherished the truly scientific attitude of mind. The clearness of vision, the comprehensiveness of treatment, and the resourcefulness of experimental procedure which characterize his work may be regarded as a heritage of his university training.

In 1894 he began a series of travels which helped to widen his outlook and orient his activities in the field of theoretical and applied biology. The first of these voyages, undertaken at the behest of the Königl. Preussischen Akademie der Wissenschaften, was devoted to an investigation of the development of the ganoid fishes of North America. From 1896–1900 he served as physician to troops in German East Africa with a special commission to pursue scientific studies. Here he made his first acquaintance with tropical medicine and parasitic diseases. Dependent largely upon his own resources and ingenuity, he achieved marked success as a physician and in addition made noteworthy observations on the natural history of the region. During the period 1898–1900 he held a special commission from the Königl. Preuss. Akad. to undertake faunal and ethnological investigations of the Nyassa district. His interest and industry in this undertaking are demonstrated by the fact that on his return to Germany in 1900 he brought back, among other things, 800 bird skins, many of them species new to science. His ethnological studies resulted in the publication of his (1902) "Beiträge zur physichen Anthropologie der Nord-Nyassaländer" and in a later (1906) beautifully illustrated monograph on "Das deutsche Nyassa- und RuwumaGebiet, Land und Leute," Nebst Bilderatlas (enthaltend 118 Lichtdrucktafeln und 2 Karten), 2 Bände.

With the establishment of the Institut für Schiffs- und Tropenkrankheiten at Hamburg in 1900, he was called to take charge of the division of tropical medicine and concomitantly to become ausserordentlicher Professor of Tropical Medicine in the university. From the opening of the Institut in 1901 until 1910 he served as military physician and later held other official medical appointments. In addition to his duties as a physician he conducted an extensive research program and taught in the medical school of the university. Entirely familiar with his subject by first-hand observation and investigation, enthusiastic in the prosecution of his work, endowed with a forceful and gracious personality, he became widely known as a brilliant and inspiring teacher. To supplement regular laboratory instruction, he assembled demonstration material from all parts of the world and built up a great museum of tropical medicine. He was a congenial colleague, a loyal and trusted friend of Professor Dr. Bernhard Nocht, the founder and first director of the Institut. On the retirement of Prof. Nocht in 1930, Fülleborn was elected his successor, a fitting recognition of thirty years of distinguished service. Indeed, among students of tropical medicine throughout the world he had long been regarded as the ablest and most original worker in Germany.

H. B. Ward, writing in the JOURNAL OF PARASITOLOGY, vol. 19, p. 150, stated that "the foundations of modern parasitology were laid broad and deep by Leuckart, recognized at home as *Altmeister der Helminthologie* and acknowledged as the great leader by students in all nations." According to Ward it was "the biological emphasis that made Leuckart's teaching and writing so stimulating." Although Leuckart died during Fülleborn's first expedition to Africa, the younger man adopted the biological approach and experimental methods of the "Altmeister" of Leipzig, and Professor Nocht in a recent article on "Das Institut für Schiffs- und Tropenkrankheiten in Hamburg," declared that, "Die Schule Fülleborn ist eine der wenigen Stellen in Deutschland, in welcher zur Zeit noch Studien in der alten Leuckartischen Arbeitsrichtung betrieben werden." The Leuckart method is based on the conception of the parasite as a living organism carrying on its vital activities within the bodies of other living organisms. It is concerned with the bionomic interrelations between host and parasite, with the reproductive phases, dispersal stages, means of reinfection and pathological effects of the parasite. The method is essentially an experimental one, and Leuckart did not hesitate to test his hypotheses on himself and on his collaborators. Fülleborn was an ardent disciple of the cult, and an English reviewer once referred to his experiments as ceremonies in which he officiated both as high priest and as sacrificial lamb.

In order to further his knowledge by observation under natural conditions, he made repeated expeditions to study tropical diseases in their endemic centers. In 1906 he visited Egypt, East Africa, Ceylon and India. In 1908–1909 he led an expedition to the Bismarck Archipelago of the South Seas, the results of which have enriched not only the subject of tropical medicine but the ethnological collections of Hamburg and other cities. Investigations on the etiology and control of various diseases have led at one time and another to East Africa, South, Central, and North America, China, Japan, India, and the Balkan states. His early interest was in the pathology of tropical diseases but shifted gradually to the organisms which serve as causative agents. His researches covered a wide range of subjects, extending from the spirochaetes and spirochaetosis through the diseases caused by protozoans, insects, arachnids, linguatulids, trematodes, cestodes, and nematodes. Over one hundred published papers, covering the entire field of tropical medicine and parasitology, bear witness to a life of tireless and brilliant investigation. His most noteworthy researches were concerned with parasitic nematodes, and the studies on *Filaria, Ancylostoma, Strongyloides, Ascaris,* and *Onchocerca* stand as a series of classical contributions in tropical medicine. An attempt to list or evaluate his achievements would be out of place in this note. It is sufficient to recognize the breadth of experience, the fertility of ideas, the resourcefulness in technical procedure, and withal the joy in biological experiment that characterize his life and work. The soundness of his judgment is illustrated through the verification by Richardson (1930) of Fülleborn's earlier opinion that African East Coast fever is not due to *Theileria,* as previously believed, but to a filterable virus.

During the world war his researches were interrupted by service with troops. He was wounded at Mons on the west front and later served as hygienic adviser in the control of malaria in the Balkans. In this work he demonstrated that he was at the same time a theoretical biologist and a skillful practical physician.

In 1926, his sixtieth birthday was made the occasion of a celebration and the Archiv für Schiffs- und Tropenhygiene, which he had served as editor for many years, dedicated Number 9, pp. 355–628 of Volume 30 as a Festschrift to Fülleborn. Thirty research articles by thirty-three authors from all parts of the world are included in that testimonial. The personal tributes paid by Schüffner and others in connection with the Festschrift are eloquent and well deserved.

With Fülleborn science was international and his laboratory was always open to investigators. Students from all parts of the world received a gracious and cordial welcome, an expression of genuine friendliness that enhanced the prestige of German science and promoted international good-will. His interest, enthusiasm, and sound counsel were a stimulating influence to those who worked with him, and his courtesy, sincerity, honesty, and unselfishness endeared him to all who knew him. He was as ready to praise the commendable as to condemn the trivial, false, and superficial. His brilliant and sterling mental qualities were linked with a nobility of character that made him an outstanding figure both in scientific councils and at social functions. One saw him at his best in his home where his rich experience, intellectual equipment, and personal charm were delightful. A man of modest means, he lived simply and well. The world has suffered a great loss in his passing. His American friends unite in an expression of sympathy to his widow and other members of the bereaved family.